Controller Printed Circuit Board (PCB) Replacement (Continued)

i. Carefully lift the controller PCB up from the unit.

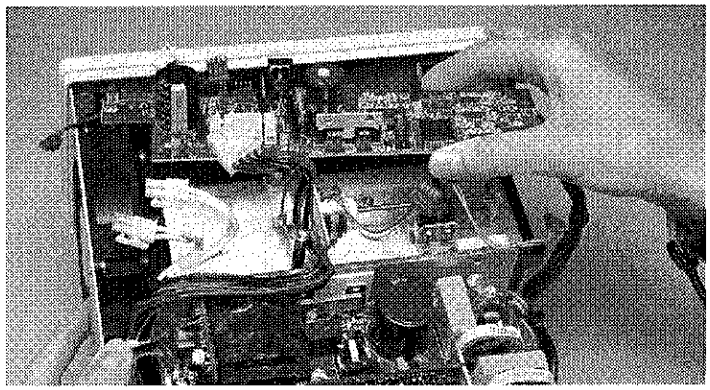


Figure 7-45
Removing the Controller PCB

Step 2 Installing the Controller PCB

a. Carefully align and place the controller PCB onto the linear slide inner chassis.

b. Install and tighten the four Phillips screws that secure the controller PCB to the linear slide inner chassis.

c. Insert the 24 volt wiring harness male connector into the J1 input power receptacle on the controller PCB and press gently until it snaps in place.

d. Insert the lamp holder wiring harnesses male connectors into the lamp "A" and lamp "B" receptacles on the controller PCB and gently press until they snap into place. Ensure that the connectors have been installed in the correct positions (See Step 1 f.).

e. Insert the circulation fan wiring harness female connector onto the J13 receptacle on the controller PCB and gently press until completely seated.

f. Insert the linear stepper motor actuator wiring harness female connector into the J2 receptacle on the controller PCB and gently press until completely seated.

g. Insert the linear slide micro switch wiring harness female connector onto the J9 receptacle on the controller PCB and gently press until completely seated.

h. Insert the hour meter wiring harness female connector onto the J6 receptacle on the controller PCB and gently press until completely seated.

i. Insert the light level / panel input wiring harness w/ light level switch fiber bundle micro switch female connector into the J5 receptacle on the controller PCB and gently press until completely seated.

7.4.26 Lamp Holder Wire Harness Removal

Replacement Part Number 3600-020

Included in Kit:	Tools Required:
Lamp holder wire harness	Phillips screwdriver (medium) Phillips screwdriver (small) 5/16" open end wrench Diagonals 5/16" nut driver
Available in Fastener Kit: 4-40 × .250" Phillips head screw (×4) Cable clamp (×2)	

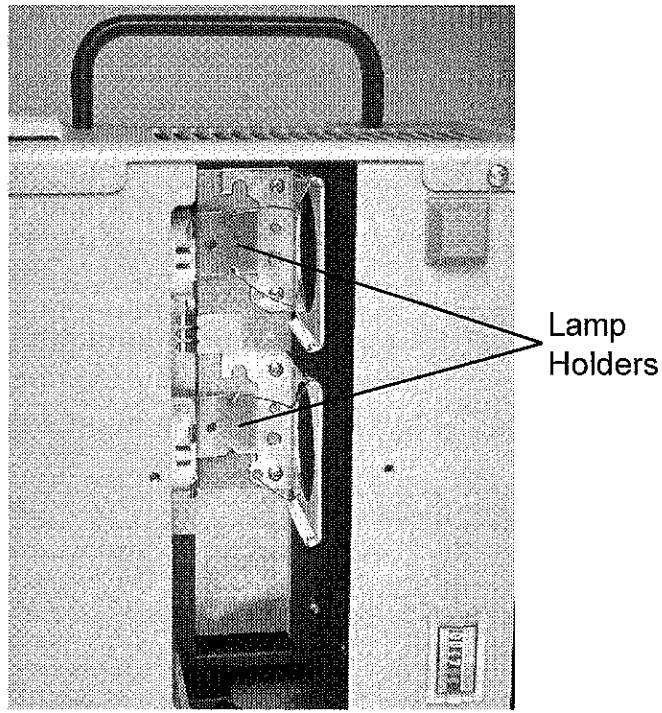
Procedure

Removed / Installed During Process:

- Light access door (See Section 5.4, Steps 2-4 for more detailed instructions.)
- Halogen lamps (See Section 5.4, Steps 5-7 for more detailed instructions.)
- Outer cover assembly (See Section 7.4.7 for more detailed instructions.)
- Power supply assembly (See Section 7.4.13 for more detailed instructions.)
- Lamp holder wire harness

WARNING: Electrical shock hazard: Disconnect the electrical supply before attempting to make any repairs to the device.

CAUTION: Electronic components used in this device are subject to damage from static electricity. Repairs made to the device must be performed only in an antistatic, ESD-protected environment.



Lamp Holder Wire Harness Removal (Continued)

Step 1 Removing the Lamp Holders

a. Using diagonals, cut the cable tie that secures the lamp holder wiring harnesses to the 24 volt wiring harness.

b. Using a 5/16" wrench, remove the Keps nut and wire clamp securing the lamp holder wiring harnesses to the stud in the bottom of the main chassis.

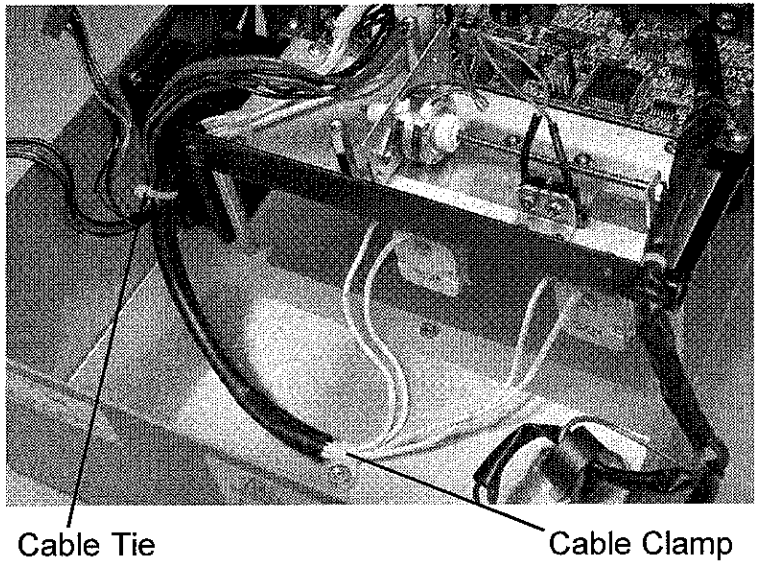


Figure 7-46
Cable Tie and Cable Clamp Locations

c. Using a 5 /16" nut driver, remove the Keps nut and cable clamp securing the lamp holder wiring harnesses to the linear stepper motor actuator bracket.

d. Note their locations then mark the lamp holder wiring harness connectors as lamp "A" and "B". Depress the locking tabs on the lamp holder wiring harnesses male connectors and remove the connectors from the lamp A and lamp B receptacles on the controller PCB.

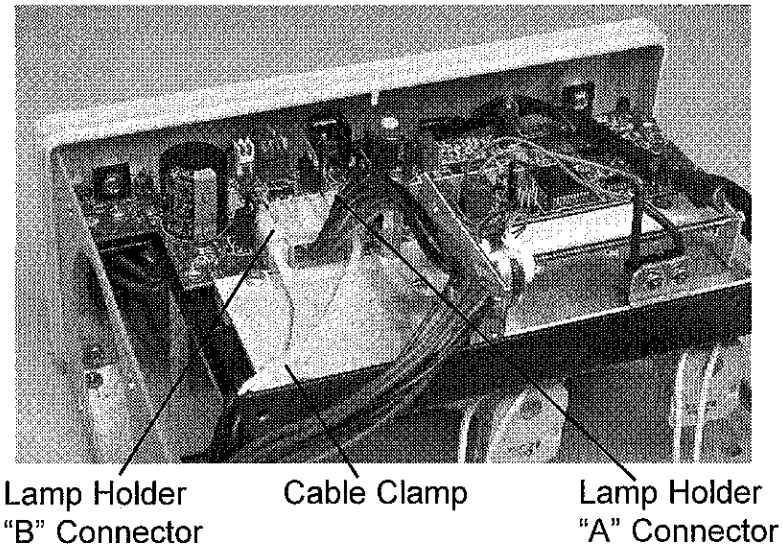


Figure 7-47
Lamp Holder Wire Harness Connections on the Controller PCB

Lamp Holder Wire Harness Removal (Continued)

e. On a protected work surface, carefully turn the unit over exposing the lamp holders.

f. Using a Phillips screwdriver, remove the four Phillips screws (two screws secure each lamp holder) that secure the lamp holders to the heat sink.

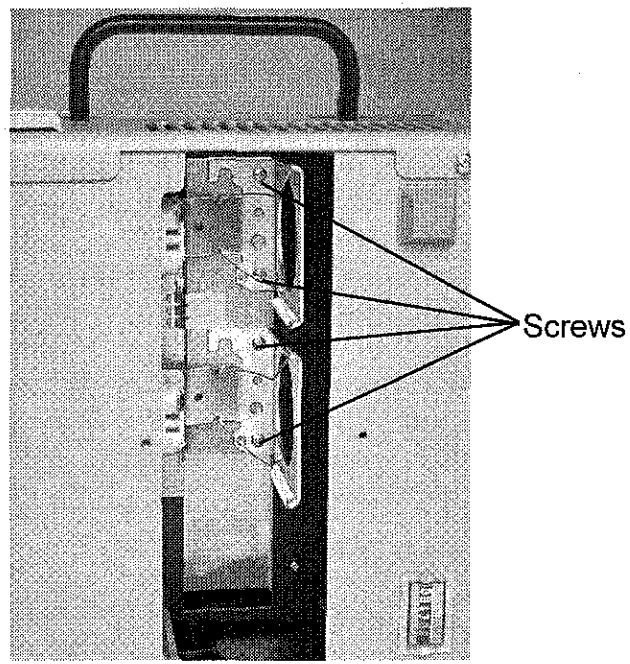


Figure 7-48
Lamp Holders Screw Location

g. Lift the lamp holders up and away from the unit as you carefully feed the lamp wires through the unit.

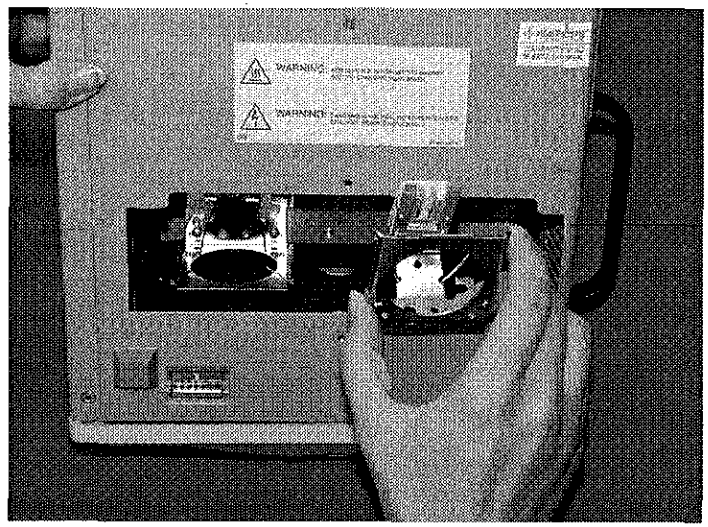


Figure 7-49
Lamp Holder Removal

Step 2 Installing the Lamp Holders

a. With the unit still upside down on a protected work surface, align and place the lamp holders onto the heat sink.

Lamp Holder Wire Harness Removal (Continued)

b. Install and tighten the four Phillips screws that secure the lamp holders to the heat sink.

c. Return the unit to the operating position.

d. Using the 5/16" Keps nut and wire clamp, secure the lamp holder wiring harnesses to the stud in the bottom of the main chassis.

e. Working from the back of the unit, pull the lamp holder wires up and around the left side of the power supply assembly.

f. Insert the lamp holder male connectors into the lamp A and lamp B receptacles on the Controller PCB and "snap" into place. Ensure that the connectors have been installed in the correct positions (See Step 1 f.).

g. Using the screw and wire clamp, secure the lamp holder wiring harnesses to the linear stepper motor actuator bracket.

h. Using the cable tie, secure the lamp holder wiring harnesses to the 24 Volt wiring harness.

NOTE: Ensure there is a minimum of 5.5" of slack between the lamp holder "A", and a minimum of 6.0" of slack between lamp holder "B" and the cable clamp attached to the main chassis.

7.4.27 Slide Rails Replacement

Replacement Part Number 3600-016

Included in Kit:	Tools Required:
Slide Rail - R. H. Slide Rail - L. H.	Phillips screwdriver (medium) Diagonals 1/4" wrench or socket
Available in Fastener Kit:	
6-32 × .375" flat head Phillips screw (×2)	

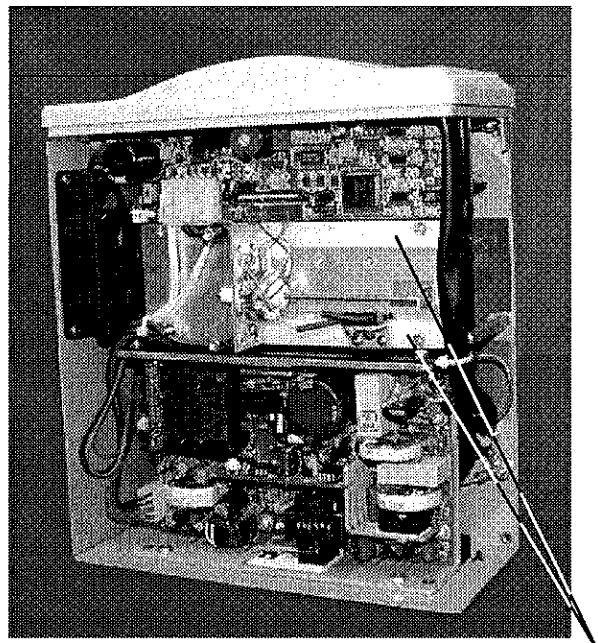
Procedure

Removed / Installed During Process:

- Light access door (See Section 5.4, Steps 2-4 for more detailed instructions.)
- Outer cover assembly (See Section 7.4.7 for more detailed instructions.)
- Linear slide micro switch subassembly (See Section 7.4.9 for more detailed instructions.)
- 24 volt wiring harness (See Section 7.4.11 for more detailed instructions.)
- Linear stepper motor actuator (See Section 7.4.23 for more detailed instructions.)
- Slide rails

WARNING: Electrical shock hazard: Disconnect the electrical supply before attempting to make any repairs to the device.

CAUTION: Electronic components used in this device are subject to damage from static electricity. Repairs made to this device must be performed only in an antistatic, ESD-protected environment.



Slide Rails Replacement (Continued)

Step 1 Removing the Slide Rails

NOTE: While performing this procedure, carefully observe the worm gear on the linear stepper motor actuator assembly. If the worm gear breaks loose from the nose piece, the linear stepper motor actuator assembly must also be replaced.

a. Using a medium Phillips screwdriver, remove the four flat head Phillips screws that secure the slide rails to the linear slide inner chassis.

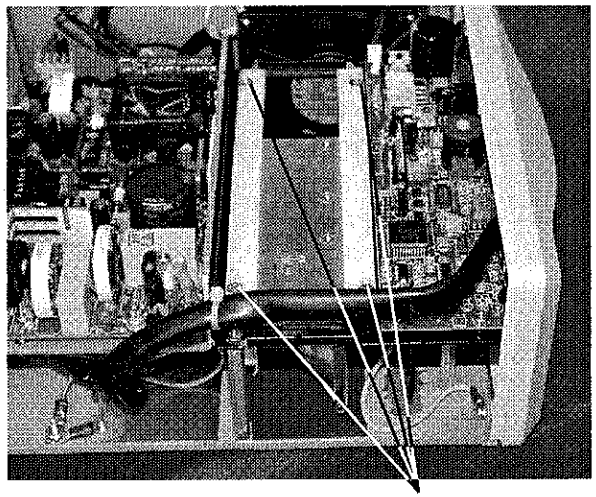


Figure 7-50
Slide Rails Screw Location

b. Pull the slide rails out and away from the linear slide bracket.

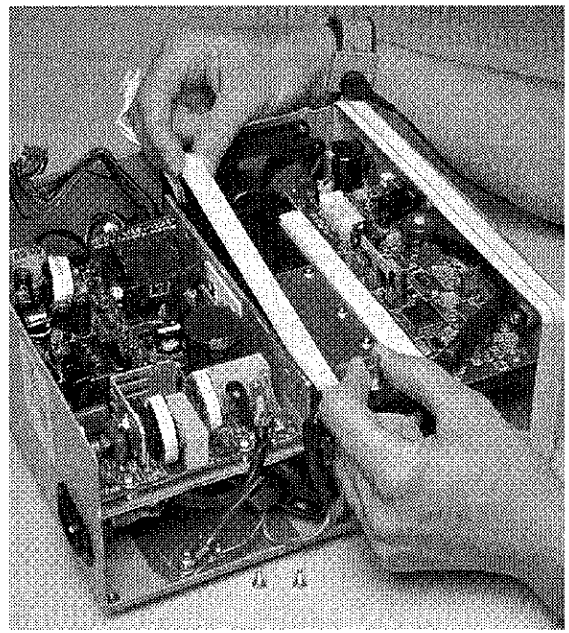


Figure 7-51
Slide Rail Removal

Slide Rails Replacement (Continued)

Step 2 Installing the Slide Rails

a. Position the slide rails on the sides of the linear slide bracket. Ensure the linear slide bracket is set into the grooves in the slide rails.

b. Install and tighten the four flat head Phillips screws that secure the slide rails to the linear slide inner chassis.

7.4.28 Linear Slide Bracket Assembly Replacement

Replacement Part Number 3600-010

Included in Kit:	Tools Required:
Linear slide bracket Slide rail (×2)	Phillips screwdriver (medium) Phillips screwdriver (small) Diagonals 1/4" wrench or socket
Available in Fastener Kit:	
4-40 × .375" flat-blade screw (×4) 6-32 × .375" flat head Phillips screw (×2) Cable clamp	

Procedure

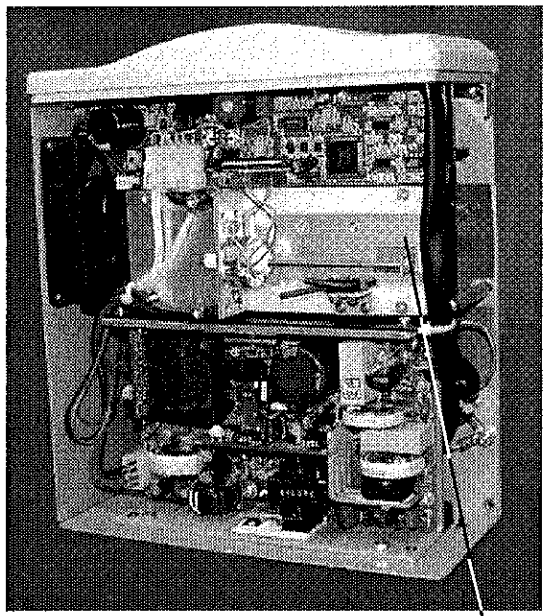
Removed / Installed During Process:

- Light access door (See Section 5.4, Steps 2-4 for more detailed instructions.)
- Outer cover assembly (See Section 7.4.7 for more detailed instructions.)
- Linear slide micro switch subassembly (See Section 7.4.9 for more detailed instructions.)
- 24 Volt wiring harness (See Section 7.4.11 for more detailed instructions.)
- Linear stepper motor actuator (See Section 7.4.23 for more detailed instructions.)
- Halogen lamps (See Section 5.4, Steps 5-7 for more detailed instructions.)
- Lamp holders w/ wiring harnesses and heat sink (See Section 7.4.26 for more detailed instructions.)
- Slide rails (See Section 7.4.27 for more detailed instructions.)
- Linear slide bracket subassembly

WARNING: Electrical shock hazard: Disconnect the electrical supply before attempting to make any repairs to the device.

CAUTION: Electronic components used in this device are subject to damage from static electricity. Repairs made to this device must be performed only in an antistatic, ESD-protected environment.

Linear Slide Bracket Assembly Replacement (Continued)



Step 1 Removing the Linear Slide Bracket Subassembly

NOTE: While performing this procedure, carefully observe the worm gear on the linear stepper motor actuator assembly. If the worm gear breaks loose from the nose piece, the linear stepper motor actuator assembly must also be replaced.

a. After removing the slide rails, the linear slide bracket is now free to be removed from the unit.

Step 2 Installing the Linear Slide Bracket Subassembly

a. Align and place the linear slide bracket in between the slide rails and directly over the heat sink.

b. Follow the removal process in reverse order to secure the linear slide bracket.

7.4.29 Linear Slide Inner Chassis Replacement

Replacement Part Number 3600-011

Included in Kit:	Tools Required:
Linear slide inner chassis	Phillips screwdriver (medium) Phillips screwdriver – flexible (medium) Phillips screwdriver (small) Diagonals 1/4" wrench or socket 5/16" wrench or socket
Available in Fastener Kit: 6-32 × .250" Phillips Sems screw (×6)	

Procedure

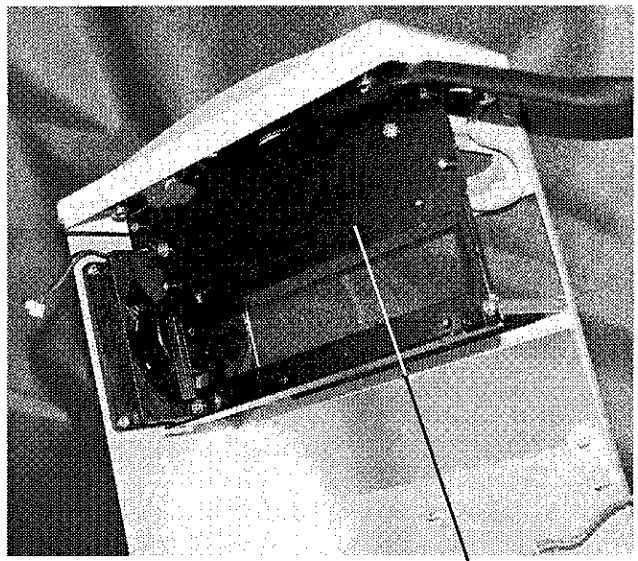
Removed / Installed During Process:

- Light access door (See Section 5.4, Steps 2-4 for more detailed instructions.)
- Outer cover assembly (See Section 7.4.7 for more detailed instructions.)
- Linear slide micro switch subassembly (See Section 7.4.9 for more detailed instructions.)
- 24 Volt wiring harness (See Section 7.4.11 for more detailed instructions.)
- Linear stepper motor actuator (See Section 7.4.23 for more detailed instructions.)
- Power supply assembly (See Section 7.4.13 for more detailed instructions.)
- Controller PCB (See Section 7.4.25 for more detailed instructions.)
- Halogen lamps (See Section 5. 4, Steps 5-7 for more detailed instructions.)
- Lamp holders w/ wiring harnesses and heat sink (See Section 7.4.26 for more detailed instructions.)
- Slide rails (See Section 7.4.27 for more detailed instructions.)
- Linear slide bracket (See Section 7.4.28 for more detailed instructions.)
- Linear slide inner chassis

WARNING: Electrical shock hazard: Disconnect the electrical supply before attempting to make any repairs to the device.

CAUTION: Electronic components used in this device are subject to damage from static electricity. Repairs made to this device must be performed only in an antistatic, ESD-protected environment.

Linear Slide Inner Chassis Replacement (Continued)



Step 1 Removing the Linear Slide Inner Chassis

a. Using a medium Phillips screwdriver, remove the four Phillips Sems screws that secure the linear slide inner chassis to the standoffs on the bottom of the main chassis.

b. Using a medium Phillips screwdriver, remove the two Phillips Sems screws that secure the linear slide inner chassis to the front panel assembly.

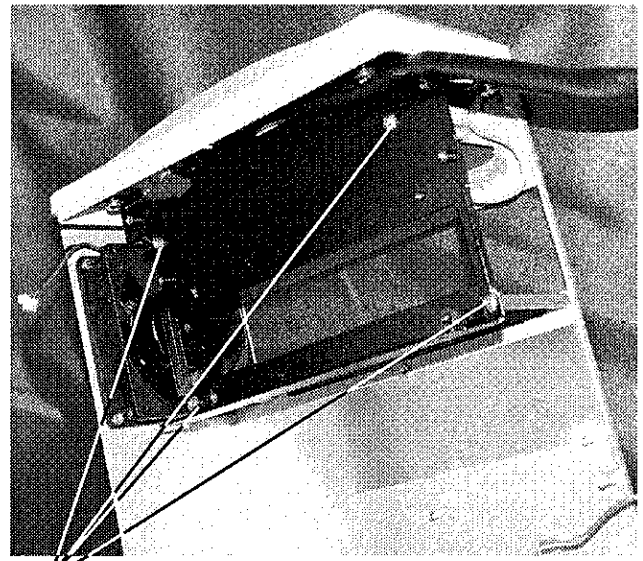


Figure 7-52
Linear Slide Inner Chassis Screw Location

c. Lift the linear slide inner chassis up from the main chassis.

Linear Slide Inner Chassis Replacement (Continued)

Step 2 Installing the Linear Slide Inner Chassis

a. Align and position the linear slide inner chassis on the main chassis.

b. Install and tighten the two Phillips Sems screws that secure the linear slide inner chassis to the front panel assembly.

c. Install and tighten the four Phillips Sems screws that secure the linear slide inner chassis to the standoffs on the bottom of the main chassis.

7.4.30 Main Chassis Subassembly Replacement

Replacement Part Number (U. S. and Canada) 3600-013

Replacement Part Number (International) 3600-039

Included in Kit:	Tools Required:
Main chassis Serial number label Lamp replacement caution label Agency approval label Rubber foot (×4) Cable clamp	Phillips screwdriver (medium) Phillips screwdriver – flexible (medium) Phillips screwdriver (small) Diagonals 5/16" wrench or socket
Available in Fastener Kit:	
6-32 × .250" Phillips Sems screw (×6) 2.375" Standoff (×4)	

Procedure

Removed / Installed During Process:

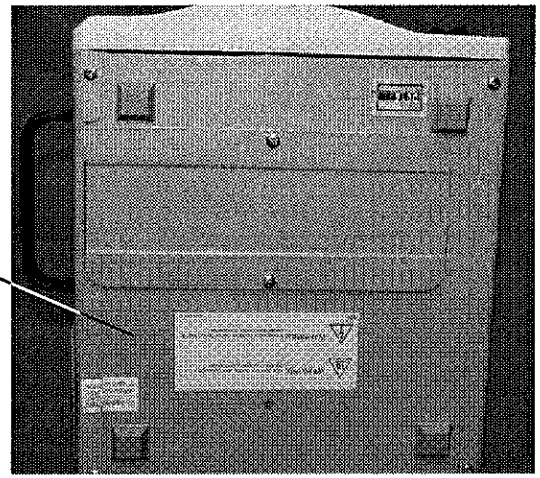
- Light access door (See Section 5.4, Steps 2-4 for more detailed instructions.)
- Outer cover assembly (See Section 7.4.7 for more detailed instructions.)
- Linear slide micro switch subassembly (See Section 7.4.9 for more detailed instructions.)
- AC power inlet (See Section 7.4.10 for more detailed instructions.)
- 24 Volt wiring harness (See Section 7.4.11 for more detailed instructions.)
- Circulation fan w/ wiring harness (See Section 7.4.12 for more detailed instructions.)
- Linear stepper motor actuator (See Section 7.4.23 for more detailed instructions.)
- Power supply assembly (See Section 7.4.13 for more detailed instructions.)
- Front panel assembly removal (See Section 7.4.14 for more detailed instructions.)
- Hour meter wiring harness (See Section 7.4.16 for more detailed instructions.)
- Hour meter (See Section 7.4.17 for more detailed instructions.)
- Controller PCB (See Section 7.4.25 for more detailed instructions.)
- Halogen Lamps (See Section 5.4, Steps 5-7 for more detailed instructions.)
- Lamp holders w/ wiring harnesses and heat sink (See Section 7.4.26 for more detailed instructions.)
- Slide rails (See Section 7.4.27 for more detailed instructions.)
- Linear slide bracket assembly (See Section 7.4.28 for more detailed instructions.)

Main Chassis Subassembly Replacement (Continued)

- Linear slide inner chassis (See Section 7.4.29 for more detailed instructions.)
- Main chassis subassembly

WARNING: Electrical shock hazard: Disconnect the electrical supply before attempting to make any repairs to the device.

CAUTION: Electronic components used in this device are subject to damage from static electricity. Repairs made to this device must be performed only in an antistatic, ESD-protected environment.



Step 1 *Removing the Main Chassis Subassembly*

a. All components have now been removed from the main chassis subassembly.

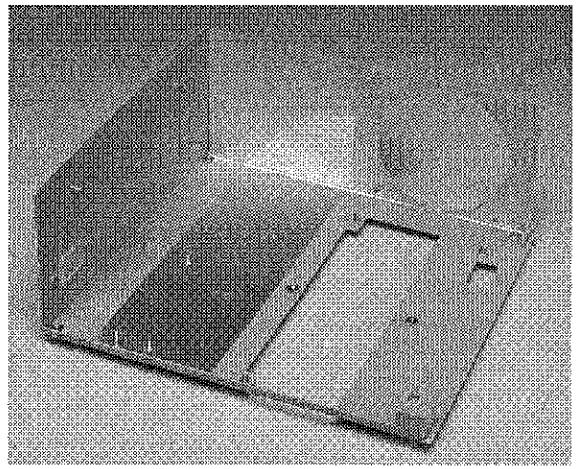


Figure 7-53
Bare Main Chassis

Step 2 *Installing the Main Chassis Subassembly*

a. Follow the removal process in reverse order to install all components into the main chassis subassembly.

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Chapter 8: Testing

8.1 Testing Process 8-3

8.2 Wallaby 3 Calibration of the Control PCB 8-4

8.3 System Final Test 8-6

8.4 Ground Impedance, Earth Leakage Current, and Safety Test 8-11

8.5 Controller PCB Calibration Data Sheet 8-13

8.6 System Final Test Data Sheet 8-14

8.7 Ground Impedance, Earth Leakage Current, and Safety Test Data Sheet 8-16

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Chapter 8: Testing

8.1 Testing Process

The following processes should be followed after a repair has been done on the Wallaby 3 Phototherapy System (Wallaby 3).

8.2 Wallaby 3 Calibration of the Control PCB

8.2.1 Purpose

This calibration of the Controller Printed Circuit Board (PCB) will verify:

- the control PCB has not failed
- the panel illuminate values are within the tolerance allowance.

This test can be done after the replacement of the controller PCB.

8.2.2 Test Equipment and Tools

- Unit Under Test (UUT)
- Digital Multimeter (DMM) (See Appendix A)
- Fiber Optic Panel*

  Standard Panel Model EG2000 and / or

  Neonatal Panel Model EG2000N
- Mini-grabber leads
- Small, flat blade screwdriver

* An appropriate fiber optic panel would be the panel to be used with the UUT for therapy:

For any further information refer to the Parent or Professional Manual.

8.2.3 Equipment Setup

Step 1 Disconnect the UUT from the AC power source.

Step 2 Remove the light access door (see Section 5.7 for detailed instructions).

Step 3 Remove the outer cover enclosure assembly (see Section 7.4.7 for detailed instructions).

Step 4 Return the UUT to the operating position. Set the light access door under the UUT to keep the active lamp from damaging the ESD mat.

Step 5 Insert the fiber optic panel into the fiber bundle connector opening of the UUT. Push the fiber optic panel cord into the fiber bundle connector until it locks in place.

Step 6 Set the DMM to read **20 VDC** and insert the mini-grabber leads into the DMM.

Step 7 Connect the **RED** mini-grabber to the **TP10** located on the controller PCB and the **BLACK** mini-grabber to the **TP24** also located on the controller PCB.

Wallaby 3 Calibration of the Control PCB (Continued)

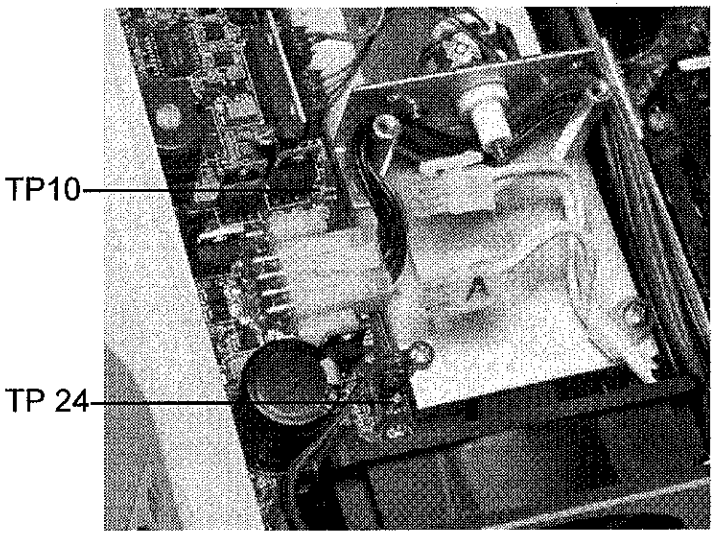

Figure 8-1
Location of TP10 and TP24

Step 8 Set the light level switch to **2 (High)**.

Step 9 Connect the UUT to the AC power source and power up UUT.

NOTE: Allow the UUT to stabilize for about two (2) minutes.

8.2.4 Calibration Procedure

Step 1

a. Using the DMM, measure the **VDC** at **TP10** on the **2** (High) intensity.

b. Adjust the potentiometer **(RT1)** using a small flat blade screwdriver until a **reading 20.20 ± 0.01 VDC (20.19 to 20.21 VDC)** is obtained.

c. Record the adjusted value (Data Sheet, Page 8-13).

Step 2

a. Set the light level switch to **1** (Low) intensity.

b. Record the value from the DMM (Data Sheet, Page 8-13). The value should be **18.35± 0.2 VDC (18.15 to 18.55 VDC)**.

c. If the value measured is not within tolerance, repeat Steps 1 and 2 adjusting the potentiometer slightly above **20.20 VDC** or slightly below **20.20 VDC** while keeping the value **within** the allowed tolerance.

NOTE: If the values measured on the DMM cannot be adjusted within tolerance after a couple of attempts, fail the board.

Step 3 Mark the controller PCB as Pass or Fail (Data Sheet, Page 8-13).

8.3 System Final Test

8.3.1 Purpose

This System Final Test and the equipment used will verify the following functions of the Wallaby 3:

- Panel Presence
- Lamp Open Function
- Lamp Redundancy System (Lamp Shuttle Function)
- Lamp intensity

This test is to be done after any repairs of the Wallaby 3.

CAUTION: Electronic components used in this device are subject to damage from static electricity. Repairs made to, or test performed on, this device must be performed only in an antistatic, ESD-protected environment.

8.3.2 Test Equipment and Tools

- Unit Under Test (UUT)
- Calibrated Joey Dosimeter (Light intensity meter) TS-03600-002
- Fiber Optic Panel

  Standard Panel Model EG2000 and / or

  Neonatal Panel Model EG2000N
- Stop watch
- Phillips screwdriver (medium)
- Electrical Safety Analyzer (Refer to Appendix A-4)

8.3.3 Equipment Setup

Step 1 Disconnect the UUT from the AC power source.

Step 2 Remove the light access door (see Section 5.7 for detailed instructions).

Step 3 Remove the lamp from the active side of the compartment and maintain that lamp.

NOTE: Avoid touching the lamp or the inside of the lamp reflector. Oil from your hands / fingers shorten the life of the lamp.)

System Final Test (Continued)

Step 4 Place the UUT with feet down and the front panel facing the operator. Set the light access door under the UUT to keep the active lamp from damaging the ESD mat.

Step 5 Connect the power cord to the AC inlet of the UUT, and verify that the power cord is plugged into a VAC power source.

Step 6 Insert the standard fiber optic panel into the fiber bundle connector opening of the UUT unless the Neonatal Panel is the only panel available. Push the fiber optic panel cord into the fiber bundle connector until it locks in place.

Step 7 Set the light level switch of the UUT to **2** (High) intensity.

8.3.4 Test Procedure

Step 1 **Record** the hour meter reading (Data Sheet, Page 8-14).

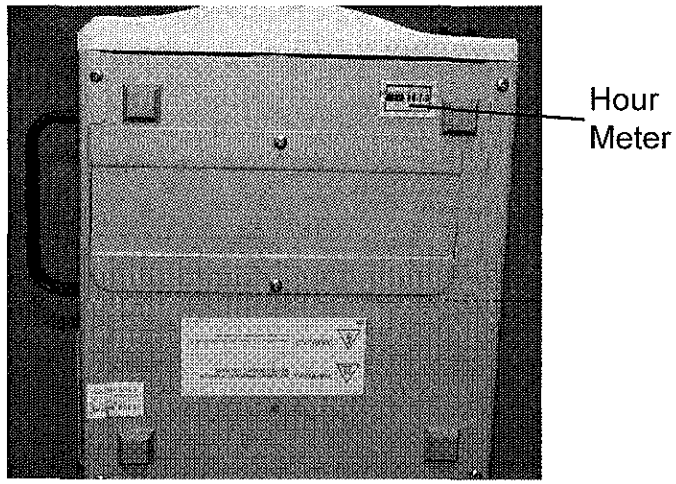

Figure 8-2
Location of the Hour Meter

Step 2

a. Be prepared to record, using a stop watch, the time it takes for the linear actuator to move the inactive lamp to the active position.

b. Turn the UUT **ON**, start the stop watch, and verify on the Pass / Fail on the Data Sheet (Data Sheet, Page 8-14) that the green power LED and amber alert LED becomes active at power up.

System Final Test (Continued)

Step 3 Stop the stop watch once the linear actuator moves into the active position. Record the stop watch time (Data Sheet, Page 8-14) and verify that within **10 seconds** of power **ON** the Linear Actuator moves the inactive lamp to the active position. Verify this action is followed by the illumination of the active lamp and the blinking of the alert LED.

NOTE: Allow the UUT to stabilize for about two (2) minutes.

Step 4 a. Select three positions on the fiber optic panel to measure the irradiance values, using the two ends and the middle preferably.

NOTE: The three positions will overlap on the neonatal panel.

b. Place the black light sensor of the Joey Light Intensity Meter on the flat end of the fiber optic panel that has been chosen for Position **1**.

c. Press the red button on the Joey and record the reading (Data Sheet, Page 8-14).

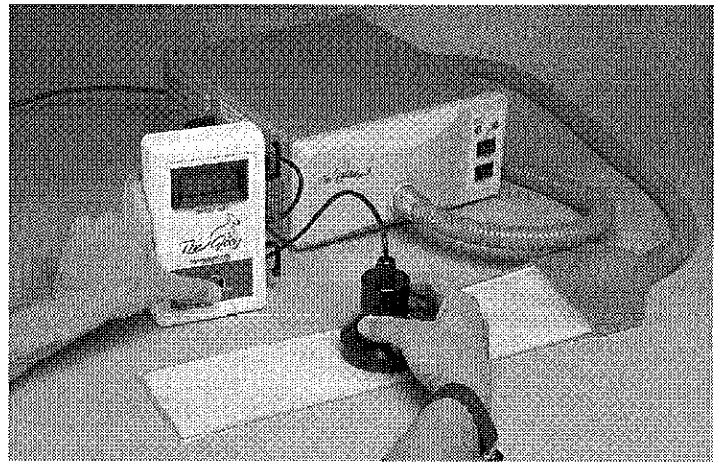

Figure 8-3
Use of the Joey Light Intensity Meter

Step 5 Repeat Steps 4b and 4c above for positions 2 and 3.

Step 6 Calculate the average:

(Position 1 + Position 2 + Position 3) / 3 = Average

then record the average value on the Data Sheet (Data Sheet, Page 8-14).

System Final Test (Continued)

Step 7 *Indicate whether the average value is within the* specified range Pass / Fail (see the appropriate table below), (Data Sheet, Page 8-14).

Step 8 Toggle the light level switch to **1** (LOW) intensity and repeat steps 4a through 7.

INTENSITY LEVEL	AVERAGE IRRADIANCE
2 (HIGH)	≥ 35 μW/cm²/nm
1 (LOW)	≥ 25 μW/cm²/nm

Table 8-1
Neonatal Panel Light Intensity

INTENSITY LEVEL	AVERAGE IRRADIANCE
2 (HIGH)	≥ 15 μW/cm²/nm
1 (LOW)	≥ 10 μW/cm²/nm

Table 8-2
Standard Panel Light Intensity

Step 9

a. Turn the UUT **OFF**.

b. Allow the lamp to cool for up to **5 minutes**. (Lamp should be cool to the touch)

c. Insert the removed lamp back into its holder and remove the active lamp from the active position.

d. Toggle the light level switch to **2** (HIGH) intensity and repeat steps 2 through 8 for the active lamp.

Step 10

a. Turn the UUT **OFF**.

b. Allow the lamp to cool for up to **5 minutes**. (Lamp should be cool to the touch)

c. Remove the lamp from the active position. (No lamps should be in UUT.)

d. Turn the UUT **ON**, and verify on the Data Sheet (Pass / Fail), (Data Sheet, Page 8-14) that, at power up, the green power LED is active and the amber alert LED is active and stays active.

System Final Test (Continued)

Step 11

a. Turn the UUT **OFF** and insert both lamps back into the lamp holders.

b. Turn the UUT **ON** and verify on the Data Sheet (Pass / Fail), (Data Sheet, Page 8-14) that the green power LED is active and the amber alert LED becomes inactive within **4.0 seconds**.

Step 12

a. Repeat Section 8.3.3, Step 7 and Section 8.3.4, Step 4a to 8, using the Neonatal Panel (small panel) if a Neonatal Panel is available.

b. Turn the UUT **OFF**, and remove the power cord.

c. Install the light access door on the UUT.

d. Record the hour meter reading on the Data Sheet and verify (Pass / Fail), (Data Sheet , Page 8-14) that the hour meter is working.

8.4 Ground Impedance, Earth Leakage Current, and Safety Test

Respironics recommends that the following tests be performed every time the outer cover enclosure assembly is removed and installed on the unit.

NOTE: A BIO-TEK 601 Pro Safety Analyzer or equivalent is used for this test. (See Appendix A)

8.4.1 Ground Impedance

Step 1 Measure and record the earth resistance value (Data sheet, Page 8-16). Test current is 25 amps. The value must be **less than** 0.100 Ohms (Ω) to pass.

8.4.2 Earth Leakage Current

Step 1 Measure and record the Normal Pole, No Earth, L2 earth leakage current (Data Sheet, Page 8-16). The value must be **less than** 300 microamps (µ) to pass.

Step 2 Measure and record the Reverse Pole, No Earth, L2 earth leakage current (Data Sheet, Page 8-16). The value must be **less than** 300µ to pass.

Step 3 Measure and record the Reverse Pole, No Earth, No L2 earth leakage current (Data Sheet, Page 8-16). The value must be **less than** 300 µA to pass.

Step 4 Measure and record the Normal Pole, No Earth, No L2 earth leakage current (Data Sheet, Page 8-16). The value must be **less than** 300 µA amps.

8.4.3 Safety

Step 1 Apply **1500 VAC** from power cord line and neutral to metal enclosure for 1 minute. Record on the test data sheet as pass or fail.

Step 2 Apply **4000 VAC** from the power cord line and neutral to metal foil applied to the plastic front panel. Record on the test data sheet as pass or fail.

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8.5 Controller PCB Calibration Data Sheet (Optional)

Section 8.2.4	Verification Step	Expected	Actual / Adjusted	Conclusion (Pass / Fail)
Step 1b	DMM DC volts High Intensity	20.2 VDC ± 0.010		
Step 2b	DMM DC volts Low Intensity	18.35 VDC ± 0.2		

8.6 System Final Test Data Sheet

Model#: _____ **Serial Number:** _____ **Notification No.:** _____

Step Number	Data Sheet	Pass / Fail	Measured Value	
1	1st Hour meter reading.			
3	1st Verification that the lamp holder changed within 10 seconds.			
3	Verify that the Green LED is active & Amber LED is blinking.			
	Check values for both panels if both are available.		Standard	Neonatal
4c	Joey at position 1 (High Intensity)			
5	Joey at position 2 (High Intensity)			
5	Joey at position 3 (High Intensity)			
6/7	Average of the 3 readings		≥ 15	≥ 35
	Check values for both panels if both are available.		Standard	Neonatal
8	Joey at position 1 (Low Intensity)			
8	Joey at position 2 (Low Intensity)			
8	Joey at position 3 (Low Intensity)			
8	Average of the 3 readings		≥ 10	≥ 25
9d	2nd Verification that the lamp holder changed within 10 seconds.			

System Final Test Data Sheet (Continued)

Step Number	Data Sheet	Pass / Fail	Measured Value	
9d	Green LED active & Amber LED blinking.			
	Check values for both panels if both are available.		Standard	Neonatal
9d	Joey at position 1 (High Intensity)			
9d	Joey at position 2 (High Intensity)			
9d	Joey at position 3 (High Intensity)			
9d	Average of the 3 readings		≥ 15	≥ 35
	Check values for both panels if both are available.		Standard	Neonatal
9d	Joey at position 1 (Low Intensity)			
9d	Joey at position 2 (Low Intensity)			
9d	Joey at position 3 (Low Intensity)			
9d	Average of the 3 readings		≥ 10	≥ 25
10d	Green LED & Amber LED are active			
11b	Green LED active & Amber LED is inactive within 4 seconds			
12d	2nd Hour meter reading			

Signature: _____ **Date:** _____

8.7 Ground Impedance, Earth Leakage Current, and Safety Test Data Sheet

8.4	Test	Measured Value	Spec.	Pass / Fail
8.4.1	**Ground Impedance**			
Step 1	Ground Impedance		< 0.100 Ohm	
8.4.2	**Earth Leakage**			
Step 1	Norm. Pole, No Earth, L2		< 300 microamps	
Step 2	Rev. Pole, No Earth, L2		< 300 microamps	
Step 3	Rev. Pole, No Earth, No L2		< 1,000 microamps	
Step 4	Norm., Pole, No Earth, No L2		< 1,000 microamps	
8.4.3	**Safety**			
Step 1	1500 VAC			
Step 2	4000 VAC			

Signature: _____ **Date:** _____

Appendix A: Tools and Equipment

A.1 Service Tools and Equipment A-3

A.2 Acceptable Test Equipment A-4

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Appendix A: Tools and Equipment

A.1 Service Tools and Equipment

You should have the following hand tools, supplies, and equipment available for troubleshooting, testing, and repairing the Wallaby 3 Phototherapy System.

- Antistatic, Electro-Static Discharge (ESD) - protected work station - minimum requirement is a grounded mat and wrist strap
- Common hand tools:

  Diagonals (wire cutters)

  Flat-blade screwdriver (small)

  Mini grabber leads

  Phillips screwdriver (small)

  Phillips screwdriver (medium)

  Phillips screwdriver - flexible (medium)

  Phillips screwdriver (large)

  1/4" wrench or socket

  5/16" wrench or socket

  5/16" open end wrench

  Needle nose pliers

  Stop watch

- Supplies:

  Cleaning cloth

  Isopropyl alcohol

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